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Title: Pump probe phenomena in strongly correlated systems

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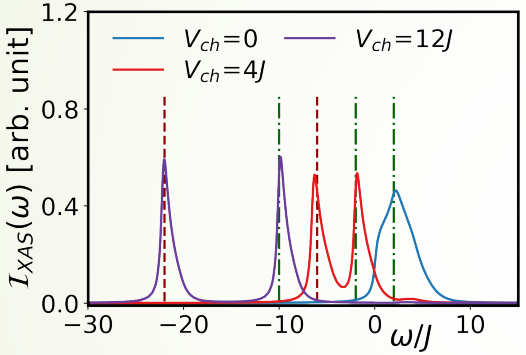
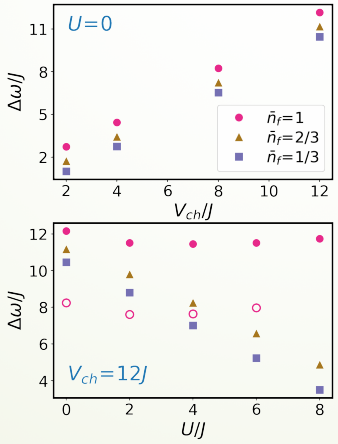
Nonequilibrium x-ray absorption spectroscopy

Chen-Yen Lai and Jian-Xin Zhu, Phys. Rev. Lett. **122**, 207401 (2019).

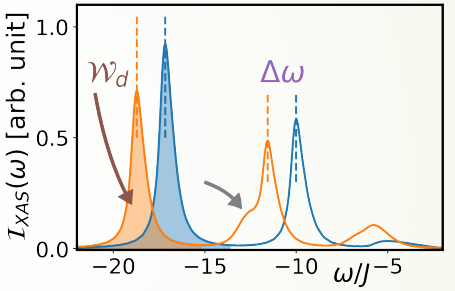
- Core hole effect causes splitting at equilibrium

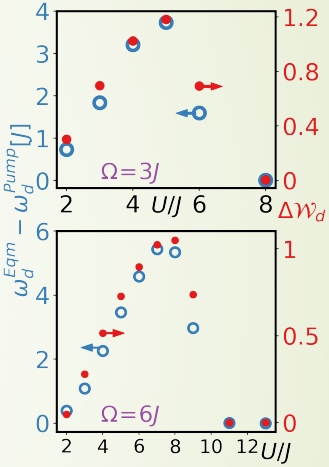


- The difference between two major peak shows strongly correlated effect.

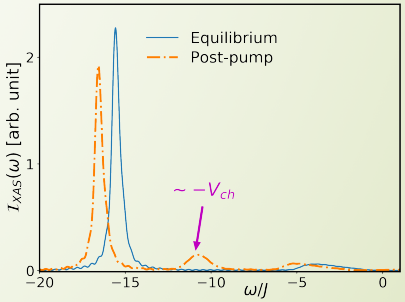


- Resonance between pulse frequency and Matt gap





- Metallic droplet from dynamically emerging core hole



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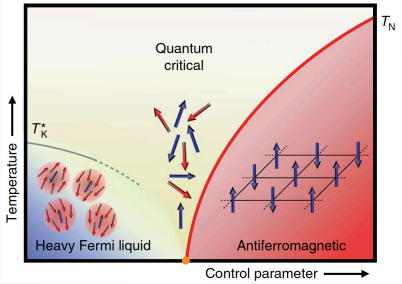
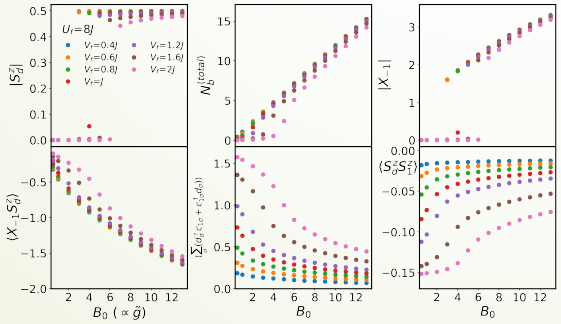
Dynamical response from Kondo impurity model

Chen-Yen Lai, Qimiao Si and Jian-Xin Zhu, in preparation.

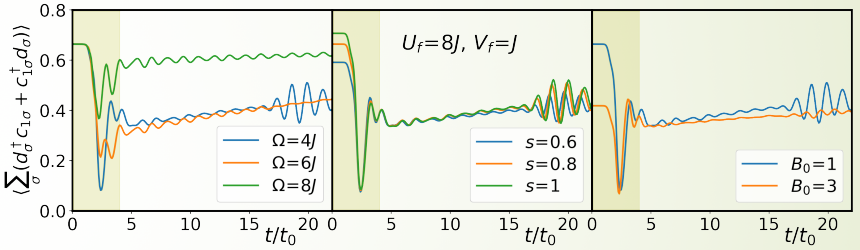
- Quantum critical point in heavy fermion compound



- Impurity model capture the qualitative phase diagram



- Response from pump pulse



- Post-pump oscillation depends on the coupling strength and is independent of pump frequency.
- Approaching localized state, the amplitude of the oscillation diminishes.

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